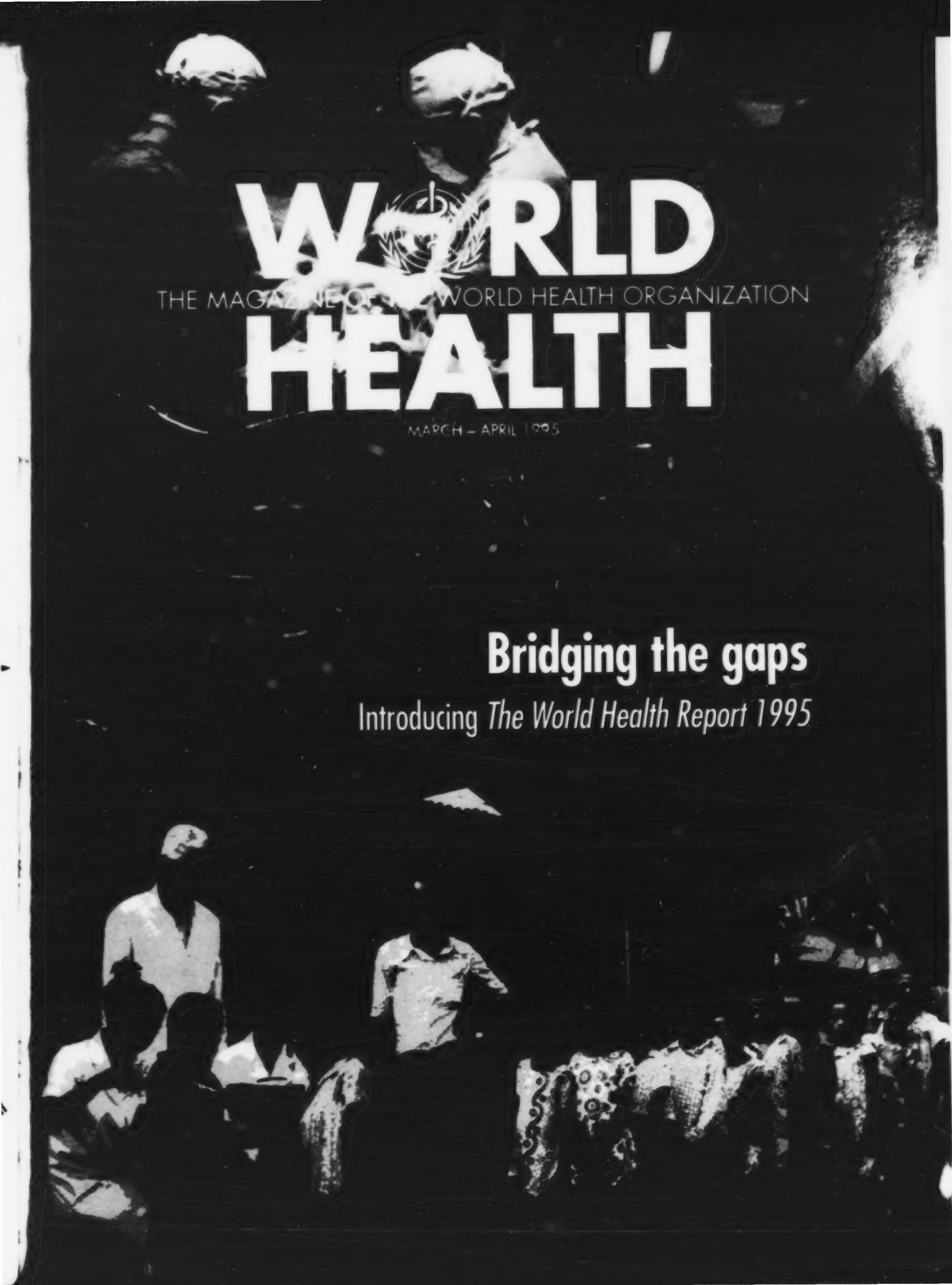

WORLD HEALTH

THE MAGAZINE OF THE WORLD HEALTH ORGANIZATION

MARCH – APRIL 1995

Bridging the gaps

Introducing *The World Health Report 1995*

WORLD HEALTH

THE MAGAZINE OF THE WORLD HEALTH ORGANIZATION

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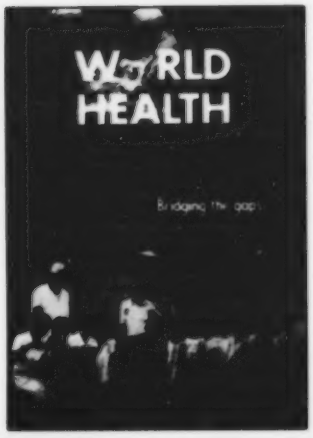

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Editorial

The state of the world's health

Hiroshi Nakajima

An indispensable factor for equity in health is timely and accurate information.

Dr Hiroshi Nakajima, Director-General of the World Health Organization

Our future depends to a large extent on being adequately informed. ***The World Health Report 1995*** is a response to this more and more acutely felt need. Reliable health information is demanded not only by health professionals, politicians and business people who need it to meet the various responsibilities of their jobs, but by individuals and families in every walk of life. Their questions extend from universal concerns about what is happening in the world to very particular ones such as how to avoid diabetes, or how to look after a sick child, or how to ensure the safety of a blood transfusion. As the world's health authority, WHO is uniquely well placed to gather and publicize whatever information is available on such questions.

Readers will find strong arguments in these pages both for confidence and for anxiety about the state of the world's health. Rising life expectancy and declining infant mortality have long been recognized as key indicators of progress in providing effective health care. The fact that this trend has continued globally in recent years in spite of many daunting obstacles is indeed a source of deep encouragement, especially to the countless people who are striving for better health at every level of the health care system. But to see at the same time that the gaps between rich and poor are widening, or that controllable diseases such as tuber- culosis and malaria still claim millions of lives each year, can just as easily offer a pretext for cynicism and despair, particularly for those whose lives or well-being are being destroyed because of these inequities.

More than ever before, some of the best opportunities for defending ourselves against health hazards can be found in our everyday living situations – in the family, in the school, at the workplace and in the district-level health services. This has been dramatized by the rapid rise of diseases related to lifestyle, but in many cases it is equally true for long-standing infectious and parasitic diseases. As this issue of ***World Health*** shows, the power of information for promoting and protecting health in such settings is still in the early stages of being recognized and used.

The need for global cooperation and coordination is also becoming daily more urgent as both the dangers and positive powers of technology relentlessly increase. Ethical issues such as those surrounding access to health care, reproductive health, biotechnology, the safety of new drugs and vaccines, or the options for dying with dignity make this abundantly clear. Here again, the indispensable common factor is timely and accurate information.

My hope is that both the encouraging facts and the harsh ones reported here will strengthen the determination of all those involved in health care to bridge the gap between what has been achieved so far and what we need to and can achieve. ■

Hiroshi Nakajima, M.D., Ph.D.

The World Health Report 1995
Bridging the gaps

Mathu Subramanian

People can increasingly expect to remain healthy and active even when they live to an old age

WHO and the international health community hope to bring about further improvements in global health status and greater equity in health, thus bridging the health development gap between countries and between different population groups within countries.

The world community should be jubilant. Globally, life expectancy at birth – the average number of years a newborn baby can be expected to live if current mortality trends continue – has increased to 65 years in 1993; infant mortality rate has fallen to 62 per 1000 live births; and a rapid deceleration of population growth is projected from 1.7% in 1990-95 to 1.0% in 2020-2025. The percentage of children immunized by the age of one year against the six vaccine-preventable diseases reached the target of 80% in 1990. It is expected that, by the end of this century, the world can witness the eradication of poliomyelitis and dracunculiasis, the elimination of leprosy, neonatal tetanus and measles, and further efforts in the control of malaria, tuberculosis, hepatitis B, coronary heart disease and cancer.

At the other extreme, however, there are widening disparities in health status between countries and among population groups within countries; the gaps between the developing and the least developed countries in respect of life expectancy at birth and infant mortality rates have widened during the last ten years. Rapid urbanization has further marginalized the urban poor, and the number of international refugees and internally displaced persons increased by 40% between 1990 and 1993 from 30 million to 43 million. Such changes have substantial implications for the management of health and welfare services in recipient countries.

Immunization coverage seems to be declining in a number of countries, possibly due to lack of political commitment by countries, to civil unrest and to donor fatigue. The world has been "greying" rapidly; for many of the elderly, added years to life lack the quality that can enable them to live in dignity. Crippling diseases like bronchitis, asthma, rheumatoid arthritis, diabetes and mental disorders are more prevalent, particularly among the elderly. Developing countries too are experiencing an epidemiological transition, with an increasing incidence of non-communicable diseases linked to changes in lifestyles. Besides the long-standing problems of communicable diseases such as cholera, malaria and tuberculosis, there are worrying trends in mortality from accidents and suicide in young adults, particularly in industrialized countries. The pandemic of HIV infection and AIDS is also continuing.

Towards a healthier world

Nevertheless, despite the political, economic and social changes that are sweeping the world, the international health community hopes to bring about further improvements in global health status and greater equity in health by tackling problems which, at the end of the twentieth century, still characterize the health development gap between countries and between different population groups within countries.

Noting with concern the increasing financial constraints that inhibit health improvements in Member States and the social and political implications of inequity among different population groups, the gov-

erning bodies of WHO directed the Organization to draw up annual assessments, starting in 1994, of the world health status and needs. They also required WHO to publish, from 1995, an annual publication indicating the Organization's priorities for international action aimed at improving the world health situation and ensuring essential health services and services of acceptable quality.

The World Health Report 1995 – Bridging the Gaps outlines four priorities for international action. These are as follows:

- Allocating resources to support those countries and population groups where the minimum levels set by the global targets for *Health for all by the year 2000* have not yet been reached. Low-income, severely indebted, least developed countries, mostly in sub-Saharan Africa, should be the focus of an intensive campaign for international funding and technical support to establish and sustain an effective health infrastructure, particularly at the community level.
- Improving labour productivity by enhancing the health of the workforce and of schoolchildren (the potential workforce) while ensuring that the poor, particularly families with young children and the elderly, have access to primary health care. Special initiatives should be launched to improve the status of women.
- Improving equity of access to *health* and not merely to *health care* as the basis for public health policy for the future. Long-term strategies should address simultaneously the emerging double burden of diseases and conditions in the developing world, and increased efforts must be made to mobilize contributions from other sectors such as education, agriculture and the environment for achieving better health for all.
- Strengthening the capabilities of Member States in epidemiological surveillance and emergency management in the context of sustainable development.

Target attained: now 80% of all children are being immunized against six vaccine-preventable diseases before their first birthday.

This first Annual Report consists of three sections. (1) The *Status of world health* assesses global health at different phases of the life cycle – children, adolescents, adults and the elderly – as well as reporting on general health issues. (2) The *Contribution of WHO to world health* analyses the identifiable outcomes and outputs of WHO activities aimed at improving human health. A conceptual framework for clustering various WHO programmes so as to review their contributions to world health at different phases of the life cycle has been formulated and used for the purpose. (3) *Charting the future* indicates possible areas for priority action in international health during the remainder of this decade.

In addition, a special section on *The evolution of WHO* reviews historical developments in international health and the ways in which WHO has moved to meet the challenges.

The World Health Report 1995, published in May 1995, explores the burden imposed by specific diseases and other health problems throughout the world in all age groups, from children and adolescents to adults and the elderly. It presents WHO's contributions to improving global health status by providing an outcome-oriented synthesis of the Organization's significant activities and developments during 1994 and highlighting the resulting achievements and improvements in health status of people in the different age groups. About 110 pages in length, the report is directed to non-medical professionals such as development planners and policy-makers, international funding institutions and donor agencies as well as to the public and opinion-makers. ■

Five major health threats will have disappeared from the planet by the time the babies of today have become adults.

Mr Muthu Subramanian is Programme Manager, Office of World Health Reporting, World Health Organization, 1211 Geneva 27, Switzerland.

Interview

Health begins in the family

WHO's recognition that families provide an entry point through which health care can be made available to all members of society throws new light on the Organization's fundamental strategy for attaining Health for All. World Health *asked Dr Hiroshi Nakajima, the Director-General, to explain why this is so.*

Provided its members are properly informed, the family makes an excellent partner for the health professionals in maintaining good health status

World Health: *Dr Nakajima, can you tell us about WHO's approach to family health?*

Dr Hiroshi Nakajima: WHO is proposing a simple yet dynamic approach to health, a powerful strategy to intensify and move forward the integration of health care, disease prevention and rehabilitation. It is based on an inclusive vision of health, comprising the individual, the family, the community, and the environment, in which families serve as entry points for health promotion, disease prevention and care.

WH: *Some people say that the family is an outworn concept.*

HN: Families are not a concept, but the primary setting for human development and the basic unit of society. The family has evolved through history, presenting us with different structures in different ages, regions and countries. Yet it remains a universal reality, irrespective of its diverse forms.

WH: *What can families do for the health of individual people?*

HN: Families share a great deal more than their genes. Their members share lifestyles, diet, exercise and the same environment, sometimes even the occupational environment – and frequently infections. Above all, they have a common social environment, with its roles and relationships, pressures and pleasures, value systems, beliefs, modes of conduct and behaviour. All these represent a reality we cannot afford to ignore, especially if our aim is to improve people's health. Also, it is within the family that ill health is first identified and care initiated.

WH: *Don't you think that in emphasizing families some groups of people may be left out?*

HN: On the contrary. While to some extent WHO has tried to target activities on so-called "vulnerable groups", it also realizes that no group or individual can be considered in isolation. Today, in general, people live longer, and the way in which they live each stage of their life cycle is changing profoundly. This, together with rapid social and economic change, makes it even more important for the natural links between generations to be strengthened because families can provide continuity and solidarity between different age groups. For instance, in many

Fathers need to be encouraged to take their share of responsibility in ensuring the family's well-being.

places, the only support for the elderly and the only hope of escaping solitude remains their family.

WH: *Is the family health approach going to prove successful?*

HN: The family health approach makes sense technically, socially and financially. It makes good use of limited resources and is well liked and accepted in all cultures. Health is best promoted in families through their shared lifestyles, environments, food and hygiene. This is a major opportunity for action, particularly in developing countries.

WH: *Are families aware of this?*

HN: Many families are aware of the care they can provide, but their knowledge and confidence are often undermined by an intimidating health system. Families need to be empowered and, through them, all individuals. We can reinforce the knowledge and skills that families need to promote their own health, and keep them informed about health hazards and their prevention. We can make them aware of their potential as a family to provide care and support for one another, and of opportunities they can create for themselves.

Informed opinion leads to autonomy and allows people to get away from the role of passive recipients into that of activists for their own health. We can open new partnerships inside families, in communities, between health professionals and families, and between different sectors of development.

WH: *How do WHO and its Member States encourage those partnerships?*

HN: By making health services acceptable to families and accessible to all. By understanding the patient's expectations and grasping the many factors that determine health – not only biological factors but those that are linked with the environment, personality and behaviour. Cultural, economic and social factors together define the way patients are taken care of by the family, the medical institutions, and the whole of society. Here, I wish to emphasize that the family health approach does not place the burden of care on women alone. On the contrary, it is meant to involve whole families.

WH: *What about the role of men in the family?*

HN: WHO strongly supports the increased participation of men as an essential element in the family health approach. Men can and must play an important part in keeping track of children's immunization schedules and making sure that these are complied with. They can be enlisted to share responsibility for planning their family, pre-

Nutrition counselling. The more women know about health the better they can care for their families.

venting sexually transmitted diseases and HIV/AIDS, caring for the young, and supporting and protecting the physical and psychological safety and well-being of the whole family. Together with women, men should receive appropriate information to enable them to take prompt action in an emergency, for instance in cases of acute respiratory infections and diarrhoeal diseases in children, or of complications in pregnancy and childbirth.

WH: *Does WHO feel it is important to empower women?*

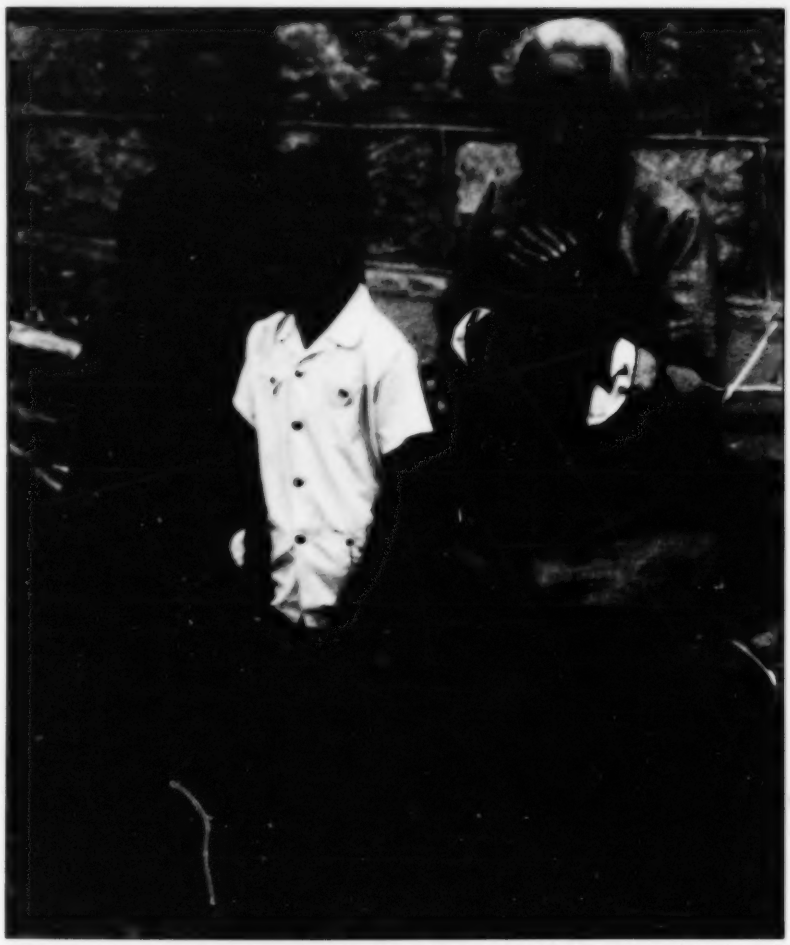
HN: WHO is very much in favour of empowering women – all women, not just a small élite of women working alongside men in the higher spheres of the economy. Every woman, wherever she lives, must be empowered so that she has the means of caring for and enhancing the health of her family as well as her own health. In fact, women's health should be a major objective for public policies, to be pursued as an end in itself and also as a catalyst for the health and development of all family members, communities and societies worldwide.

WH: *What is your view on family planning as a means of liberating women and a positive step towards economic development?*

HN: I see family planning as an essential means of achieving a satisfactory level of health in the family. Last year's International Conference on Population and Development, held in Cairo, provided a lesson on how certain policies and principles – particularly the development of primary health care and the principle of equity in access to health care – which WHO has been advocating and promoting for a long time, are now being integrated into public policies and strategies for overall development.

First, the Conference, in which WHO played a vital role, confirmed that human development, with particular attention to the role of the family, is the centre-piece for sustainable social and economic development. Reproductive health, of which family planning is only a part, is essential to the healthy growth, development and maturation that contribute to human development. Second, the Cairo Conference declared that the family should serve as the model for initiating equitable relationships between the sexes. This, in turn, will allow women to realize their potential and to lead self-fulfilling and productive (not merely reproductive) lives. The Conference further stressed that men – through an understanding of women's needs and their own behaviour – would be better able to enhance their own reproductive health and that of women.

The WHO goal of health for all provides a valid universal model for sustainable development. It is based on primary health care and district level services; it aims at achieving greater equity in health care and contributes to the social and economic well-being of individuals and families. Health for all is not a slogan. It is a profoundly humanistic objective which WHO and the countries of the world are gradually bringing closer to realization. ■



For many elderly people, the only lifeline and defence against solitude is their family.

New hope for Tupiza

Mirta Roses Periago

In 1991 Bolivia, one of the countries selected for the WHO Initiative for Intensified Cooperation with Countries, decided to include the health district of Tupiza, with a population of 125 000, in this special effort. It was aimed at supporting less developed areas to improve their health conditions and close the tremendous gap that separated them from the rest. Financial support was provided by the government of France.

With 20% unemployment and 40% of households earning less than US$ 50 per month, some 23% of the population had no access to any health service. The main strategic lines of action were defined as strengthening the health district organization, providing essential drugs and other vital materials, training health personnel in primary health care principles, developing the managerial capacity of the regional and district teams, making better use of resources through social security and public health facilities, and promoting social participation.

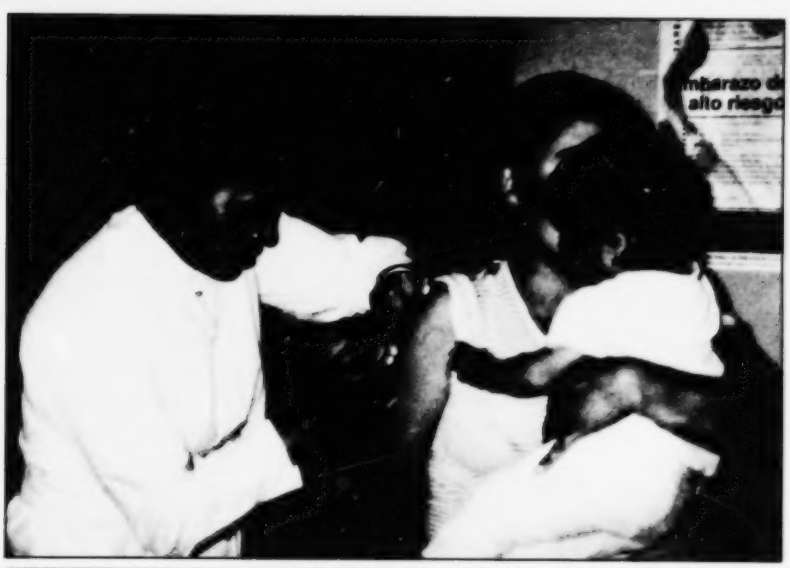
Julieta, a nurse auxiliary, feels that all the activities supported by the project have helped rural health workers to improve the services and to be included in a process of continued education. She says, "We now feel that we are not alone and abandoned as our communities are, and it makes us willing to read and learn every day something new for our people; we receive training and teaching materials, we participate in supervisions and evaluations, and we plan our activities together with our community".

The impact of all these actions was outstanding. For example, Tupiza increased immunization coverage against measles from 57% in 1991 to 80% in 1993, more people visited the health services, cholera cases decreased from 1149 in 1992 to 432 in 1993, and infant mortality fell by 27% in three years. The programme for the control of Chagas disease was considered a model to be extended to other similar areas. A Social Investment Fund enabled 10 new health posts and 15 new schools to be built, and several new community water systems were inaugurated.

In 1992, the Tupiza health workers and WHO consultants planned an intensive process of social participation called "autocensus", involving visits to every family and community to identify problems, discuss their causes and relationships, look for solutions and agree on priorities and the use of resources. The process took almost one year, and by the end had created new ties between the people and their health care system, and a new model of health care.

In 1994, the newly elected government passed the Popular Participation Law. This profoundly transformed the political and social organization of the country, and empowered the local authorities to assume new roles in several sectors: education, irrigation, rural roads, sports, culture and health. Financial resources were assessed on a per capita basis to honour these responsibilities.

Today the people, the health workers and the local leaders in Tupiza are looking to the future with new hope and feel that they are well prepared for this challenge. They feel confident enough to take the most appropriate decisions to accelerate the pace towards sustained and integrated development and a continuous improvement of their health status. ■



An auxiliary nurse immunizes a pregnant woman against tetanus.

Dr Mirta Roses Periago, the former WHO Country Representative for Bolivia, is now Assistant Director, World Health Organization Regional Office for the Americas/Pan American Sanitary Bureau, 525, 23rd Street N.W., Washington D.C. 20037, USA.

Improving health through schools

Jack Jones, Ilona Kickbusch, & Desmond O'Byrne

The school presents an ideal setting for children to acquire healthy lifestyles and skills in maintaining good health

Both WHO and the World Bank have concluded that a school health programme which provides safe and low-cost health services and health education is one of the most cost-effective investments that a nation can make to improve health.

If we consider what it takes to create health, the school emerges as an ideal setting for action. The Ottawa Charter for Health Promotion (1986), a product of the First International Conference on Health Promotion in Industrialized Countries, states that health is created by people in the settings in which they live. It also suggests that health is created by caring for oneself and others, by being able to make decisions and have control over one's life circumstances, and by ensuring that society creates conditions that allow the attainment of health by all its members. *(Box 1)*

Schools can help young people to acquire basic skills needed to create health. Such skills, sometimes called life skills, include decision-making, problem-solving, critical thinking, communication, self-assessment and coping strategies. When people have such skills they are more likely to adopt a healthy lifestyle.

If we consider how best to invest in health, school health programmes emerge as very good investments. Last year, the World Bank and WHO compared the cost-effectiveness of various public health programmes. They concluded that among the most cost-effective investments in health are programmes to: expand immunization and micronutrient supplementation; increase knowledge about family planning, nutrition and health care; reduce consumption of tobacco, alcohol and other drugs; and prevent AIDS and sexually-transmitted diseases. Clearly, school health programmes play a major role in addressing these issues, and investments in such programmes are perhaps the "very best of the best".

Schools that provide services to reduce certain health problems, participate in community health projects and encourage people to adopt healthy behaviour clearly benefit large numbers of people. *(Box 2)*

Indeed, schooling alone has been shown to be a powerful way to influence health, worldwide. Its impact is most apparent in the benefits to maternal and child health when girls receive schooling. *(Box 3)*

Young people need to be healthy in order to attend regularly and take full advantage of the opportunities provided by schools. School-based efforts that improve health in turn help to improve the learning potential and school performance of young people. *(Box 4)*

Not all schools – whether in developing or developed countries – have the resources to support health

1. Life skills improve lifestyles

In Mexico, a study of a sex education programme, based on life skills, *Planeando tu vida*, which is taught in over 200 schools, showed that adolescents, especially boys, who took part in the programme before they became sexually active were much more likely to use contraceptives in later relationships than those who had not.

In the USA, a study of a life-skills-based health education curriculum, Teenage Health Teaching Modules (THTM), involving 5000 students, showed a reduction in self-reported drug use, alcohol consumption and cigarette smoking among students who were educated with the modules.

Condoms can protect the family from AIDS, this drawing won the poster competition run by the Robert Schuman Foundation in Lithuania on World AIDS Day 1994. The artist is Mantas Skripkinis, aged 16.

2. School health projects benefit the community

A very successful programme to reduce intestinal worms was initiated in the Republic of Korea in the mid-1960s. The programme was directed mainly to student groups through schools, was expanded to whole communities, and included mass chemotherapy, health education and environmental sanitation.

It resulted in:

- the prevalence of intestinal worms among schoolchildren decreasing from over 80% in the 1960s to 0.2% in 1992;
- their prevalence in the general population of the country decreasing from 84% in 1971 to 3.8% in 1992.

as well as education. The health of students may even be endangered by incidents of violence or by a lack of sanitation facilities. Indeed, a 1993 study of school sanitation and hygiene in six Latin American countries concluded that facilities entailing serious health risks are more common than positive examples of clean school environments. Such situations obviously must be changed.

3. Education improves health!

- Surveys in 25 developing countries show that, all else being equal, 1 to 3 years of schooling among mothers reduced child mortality by about 15%, and by much more when mothers had more education. In Peru for example, seven or more years of schooling reduced the mortality risks by nearly 75%.
- Data from 13 African countries for 1975-85 show that a 10% increase in female literacy rates was accompanied by a 10% reduction in child mortality.

"Health for All" and "Education for All" are expressions of the United Nations' commitment to health and education. Because these goals are inseparably linked, they must be achieved concurrently. This will require strong alliances between health and education agencies, including WHO and UNESCO, national ministries and nongovernmental agencies.

Strategies that can assist agencies to work together were discussed at the Third International Conference on Health Promotion held in Sundsvall, Sweden in 1991. While concerted actions are essential, the impetus for action resides with individuals. Young people, as well as adults, can play a significant role in creating support for school health by raising and acting on such questions as:

- Does our school promote health?
- Is our school a healthy place to live, work and visit?
- Does our school help students, school personnel and families to address their health needs?
- What can I do both individually and with others to bring about needed change?

To turn the world's schools into "Health-promoting schools", we will need to work together. Indeed, it will require the mobilization of people and resources at local, national and international levels to work in a concerted effort to bring about change. WHO, in collaboration with the US Centers for Disease Control and Prevention and other organizations, is preparing to initiate such an effort. They hope to unite the organizational capacities of agencies at all levels into a powerful force for health in a global school health initiative. ■

4. Health improves learning potential

- Poor diet impairs learning and development. Studies show that the academic performance and mental ability of pupils with good nutritional status were significantly higher than those of pupils with poor nutritional status, even when family income, school quality, teacher ability or mental ability were taken into account.
- Whipworm infestations adversely affect school performance. In Jamaica, the removal of whipworms among school-age children led to a significant improvement in short-term and long-term memory. After nine weeks, treated children showed no significant difference from uninfested children.
- Iron deficiency influences a child's ability to benefit from classroom instruction. Studies show that when iron-deficient anaemic children first enrol in school, they are at a disadvantage in terms of their aptitudes. This disadvantage disappears when their iron levels become sufficient through supplements to the diet.

Mr Jack Jones is a Health Education Specialist with the Division of Health Promotion and Education (HPE), Health Education and Health Promotion Unit (HEP), World Health Organization, 1211 Geneva 27, Switzerland. Dr Ilona Kickbusch is Director, HPE, and Dr Desmond O'Byrne is Chief, HEP.

Live better – live longer

Nikolai P. Napalkov

People who take good care of their body improve their chances of living long and healthy lives

Most of the chronic, degenerative, noncommunicable diseases are diseases of the second half of human life, and are becoming more common as people live longer in both developed and developing countries. Decreasing the incidence of death from one cause entails increasing the deaths from some other cause. We all have to die from something: our task is to increase the healthy lifespan as far as possible.

The most important noncommunicable diseases are undoubtedly the cardiovascular diseases, since the total number of sufferers in both developed and developing countries is higher than the total cases of communicable diseases. Next come the different malignancies gathered under the general term of cancer, followed by the noncommunicable respiratory diseases, diabetes, and a number of other conditions which include hereditary ailments and the mental and neurological diseases.

Limited but important role of lifestyle

We traditionally consider cardiovascular diseases, cancer, diabetes and hereditary diseases in a single group, not only because of the considerable damage they do but also because they are caused by agents of a chemical and physical nature, which influence the hereditary system or the metabolism of the body.

Certain groups of cancer can be produced by biological factors such as viruses, as well as chronic infection, and by physical factors which set in train a cytotoxic process when they interfere with the genetic mechanism of the cells. A second group of factors acts at the level of cell regulation and produces the milieu in which the cancer cells start to multiply. There are also hereditary factors that produce a predisposition to the development of cancer.

Although sometimes called lifestyle diseases, I personally do not like to claim that such-and-such a percentage of all noncommunicable diseases are lifestyle-dependent diseases and could therefore be completely prevented. It is very difficult to calculate this percentage because so many other factors influence the incidence of different diseases. What we can say is that most noncommunicable diseases are strongly influenced by the lifestyles of different population groups. But lifestyles do not only mean bad habits or improper behaviour; they are also basic conditions of life that often do not depend on the behaviour or habits of a given individual. Quality of air, drinking-water and soil, for instance, are environmental factors which mostly depend on the behaviour of whole communities rather than individuals.

Why people smoke

One lifestyle factor which gets much attention these days is smoking, because smokers can choose if they want to smoke or not. I myself was a heavy smoker for many years; I started during the Second World War as a teenager, and continued until New Year's Eve 1970. Then I gave up when I worked as Chief of WHO's Cancer unit. My own health

community

was involved – stomach and respiratory problems, coughing and so forth. In addition, as a doctor and representative of oncology, whose professional role was to fight against cancer, I was in a difficult position of trying to convince people not to do what I did myself. Certainly there are deep metabolic and psychological reasons – some kind of predisposition – which make one group of people smokers and another nonsmokers. But the social environment – whether one's parents or friends are smokers – has an equally vital role in helping to dissuade people from smoking.

Advertisements are a powerful weapon in making smokers out of nonsmokers because they approach their target group in a subtle way, with promises of increased sex appeal and material success. These campaigns have to be combated by positive health education, carried out by health workers whose message must be as persuasive as those that advertise tobacco products.

Noncommunicable diseases are no longer just a matter for the industrialized countries. Most of the chronic, degenerative diseases are diseases of the second half of human life. They are bound to become more common as people live longer in the developing countries as well, as a result of successes in the battle against communicable diseases. We have to accept that, if we decrease the incidence of death from one cause, it will inevitably increase from some other cause. In the end we have to die from something. Our task is to increase the healthy lifespan as far as possible.

Prevention is always better

Preventive health actions are always, in the long run, the most effective: the earlier you start treatment the better are the results. For more than a decade, WHO has been trying to develop an integrated approach to the prevention of different noncommunicable diseases through early detection and treatment. It makes sense to screen a population, not for one particular disease but for all those that mostly affect people in the second half of their lives, using an integrated system of diagnosis and treatment.

The CINDI – Countrywide Integrated Noncommunicable Disease Intervention – Programme, the Inter-Health Programme and the MONICA Programme are closely related to each other. The WHO MONICA project (MONItoring of trends and determinants in Cardiovascular disease) is a ten-year study which began in the mid-1980s; the Inter-Health Programme is a global drive against lifestyles that are potentially harmful to health; and CINDI is rather more oriented towards the needs and problems of the developed countries, since it started in countries of Europe and the Americas which had more developed systems of public health services.

But the principle is one and the same – protecting the health of certain groups in the population, not only by detecting the diseases at an early stage but also by monitoring these groups in order to formulate the best approaches to prophylactic and treatment measures, while at the same time neutralizing the effect of the causative factors responsible for these relatively common diseases. ■

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Preventing diabetes

Hilary King

Diabetes mellitus is now recognized as a growing threat to public health in almost all countries of the world. No longer considered as a "disease of affluence", it increasingly affects Third World communities. From Pakistan to Mexico, epidemiological surveys have shown that 10% or more of the adult population now suffer from it and, worldwide, a total of 100 million prevalent cases are anticipated by the end of the century.

Insulin-dependent diabetes mellitus (IDDM), which often occurs in childhood and adolescence, requires daily injections of insulin to sustain life. But non-insulin-dependent diabetes mellitus (NIDDM), which usually occurs in middle-age or thereafter, is the most common form and comprises 85-90% of all diabetes. Both forms have severe complications – blindness, kidney failure, gangrene leading to amputation of limbs, and a high risk of cardiovascular disease.

Although the picture is alarming, there are reasons for optimism. Firstly, there is growing evidence that both IDDM and NIDDM may be prevented. A recent WHO report on diabetes prevention concluded that much of the increase in diabetes prevalence may be blamed on unhealthy lifestyles. Obesity, lack of regular physical exercise and inappropriate diet (too much refined carbohydrate and fat) lie at the root of the increase in NIDDM. These are factors that may be modified by the individual at risk or by whole communities. Several encouraging studies have suggested that IDDM too may eventually prove to be preventable.

The most costly aspect of diabetes, both to the individual and to society as a whole, is its long-term complications. Here again there is considerable scope for prevention. Much blindness due to diabetic retinopathy may be prevented today by early detection and appropriate therapy. In many developing countries, frequent foot ulcers and infections, leading to gangrene and loss of limbs as well as to systemic infection and death, may largely be eliminated by proper hygiene and adequate footwear. Thus, major improvements are possible with modest interventions and adequate patient education.

WHO is responding to this challenge at both the global and regional level, since both the WHO Regional Offices for Europe and for the Eastern Mediterranean have set goals and targets for diabetes control, including reductions in acute and long-term complications. WHO also supports a growing number of countries, in all regions, which have decided to establish national diabetes programmes. Guidelines for the development of these programmes have been prepared by WHO Headquarters and been translated into all WHO official languages. WHO recently published the report of a Study Group on the prevention of diabetes. It was distributed to over 6000 participants at the International Diabetes Federation (IDF) Congress in Kobe, Japan, in November 1994. WHO works closely with the IDF to raise awareness of diabetes, and has co-sponsored ***World Diabetes Day*** on 14 November each year since 1991. ■

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An epidemiological survey under way in Pakistan. Worldwide, some 10% of the adult population suffer from diabetes.

Ethics in health: some current perspectives

Sev S. Fluss

Kidney dialysis: a great many people cannot afford costly life-saving techniques – an economic fact of life that has an important bearing on health ethics.

The technological revolution in medicine over the last few decades has been accompanied by a no less striking phenomenon – the growth of the new discipline of "bioethics" and the emergence of a sub-branch tentatively named "health care ethics". Perhaps the most remarkable features of this phenomenon have been, on the one hand, the intense, and seemingly indefatigable, interest of the media and of professionals and the lay public alike in these issues, and, on the other, the extent to which ethical discourse and debate in many countries has given rise to legislation.

When did modern bioethics begin? Many would say that the seminal event was the publication on 9 November 1962 of an article in *Life* magazine entitled "They decide who lives, who dies". As described by one of the founding fathers of the new discipline, Albert Jonsen, that article was prompted by the setting up of a committee in the U.S. city of Seattle to examine which of a number of patients should have access to the newly discovered, and life-saving, technology for kidney dialysis. In September 1992, Jonsen brought together, in Seattle, some 40 leading figures in the field for a Conference on "The Birth of Bioethics". The term itself was probably first used in 1970 by Van Rensselaer Potter, a cancer researcher at the University of Wisconsin, while an eminent historian of bioethics, Warren Reich, notes that its first institutional use occurred in 1971 at Georgetown University in Washington, D.C.

Others would argue that bioethics is much older. Thus, a remarkable bioethical debate – on the ethics of animal experimentation – occurred in the House of Lords in London nearly 120 years ago. Speaking on 22 May 1876, the Earl of Carnarvon described the legislator's dilemma in graphic terms:

> *On the one hand there is the danger of going too far; on the other, the danger of not going far enough: on the one side there is the strong sentiment of humanity; on the other, there are the claims of modern science. It is a sea strewn with rocks, and it is not easy to steer safely through them.*

There are, of course, many earlier historical events that occurred in the development of contemporary medical ethics – Thomas Percival's Code of Medical Ethics in England in 1803, William Beaumont's Code of 1833 in the USA (the American Medical Association issued its first Code of Medical Ethics in 1847), and, in France, Claude Bernard's *Introduction to the Study of Experimental Medicine* (1865). In what was then Prussia, the issue of the permissibility of human experimentation attracted considerable attention in the press, Parliament, and the courts at the end of the 19th century and culminated in the first known legislation on the subject, a 1900 Directive of the Minister of Religious, Educational and Medical Affairs.

Where are we today, nearly a century after that epoch-making legislation was enacted? Here are some of the key features of recent developments.

- Many countries, and several international organizations (both intergovernmental and non-governmental), have established special committees, commissions, boards and the

equivalent to examine bioethical issues. Perhaps the best known are the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research in the USA, which issued a number of influential reports during the period 1980-83, and the French National Ethical Consultative Committee for the Life and Health Sciences, whose innovative and influential work has now entered its second decade.

- A leading role in the global debate on bioethics has been played by WHO's "sister" organization, the Council for International Organizations of Medical Sciences (CIOMS).
- Conferences and meetings on bioethics are now being held regularly in developing as well as developed countries – witness the 1st International Congress on Bioethics, held in Mexico City on 3-6 October 1994, the Second World Congress of the International Association of Bioethics, held in Buenos Aires on 24-26 October 1994, and the Journées Internationales de Bioéthique, held in Yaoundé, Cameroon, on 14-17 February 1995.
- The flow of new, and sometimes innovative, legislation in the field of bioethics has been substantial in recent years – examples are the proposed Death with Dignity Act of the State of Oregon in the USA and, of course, the three major laws on bioethics enacted in France in July 1994, marking the culmination of several years' debate in that country.
- UNESCO's International Bioethics Committee is currently developing an international instrument for the protection of the human genome, the Council of Europe is in the final stages of formulating a Bioethics Convention, and WHO is endeavouring to establish a comprehensive inventory of key issues in the field of health and ethics to be addressed by the Organization.

Key issues

What are the key issues in bioethics and health care ethics as we move towards the 21st century? Most of the readers of ***World Health*** will not have the time (or patience) to consult the newly published revised edition of the massive *Encyclopedia of Bioethics*, or indeed the annual Bibliography of Bioethics. Nor will they necessarily wish to consult such major works as the fourth edition of the *Principles of Biomedical Ethics* (by T. L. Beauchamp and J. F. Childress) or *Principles of Healthcare Ethics* (edited by R. Gillon), both of which appeared in 1994.

Suffice it to say that the following are among those "micro-ethical" and "macro-ethical" issues (not listed in order of priority) that are currently receiving particular attention, both on the part of professional groups, the media, and the public:

- equity and justice in access to health care;
- ethical issues in reproductive health, including medically assisted procreation;
- biomedical research on human subjects;
- ethical issues in mental health and the neurosciences;
- ethical issues in biotechnology;

The right to health is a fundamental human right

- embryo and fetal research;
- genetic technology, including gene therapy;
- organ and tissue transplantation;
- patients' rights;
- withholding or withdrawing life-sustaining medical treatment;
- euthanasia and physician-assisted suicide;
- treatment decisions for seriously ill neonates;
- ethical issues in the HIV/AIDS context;
- the safety of blood and blood products;
- allocation of scarce resources;
- confidentiality of medical data.

While WHO has, at least at present, no major substantive role in many of these areas, it is continuing its efforts to compile, validate and disseminate relevant information on developments in these and other areas of bioethics. This is in line with one of its constitutional functions, namely the provision of "information, counsel and assistance in the field of health". As the Preamble to the WHO Constitution points out, "Informed opinion and active co-operation on the part of the public are of the utmost importance in the improvement of the health of the people". This certainly applies to bioethics and cognate areas as much as to the more classical aspects of personal and environmental health services. ■

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The right to health

The Constitutional basis – the conceptual framework

■ WHO's Constitution proclaims:
"The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being ...".

■ The Organization's objective is *"the attainment by all peoples of the highest possible level of health".*

The Health for All approach – a guide for humanity

In 1977, the World Health Assembly resolved to formulate the above aspirations in concrete terms, namely "Health for All by the Year 2000", committing governments and WHO to the attainment of the Constitutional objective.

Towards Health for All – a template for action

WHO has just published its Ninth General Programme of Work (for 1996-2001). Here are some extracts:

■ *"Much more attention must be paid to ... ensuring equity in health care and services ..."*

■ *"The Constitution, the health-for-all goal and the concept of health as a human right, expressing succinctly the conviction that all people should have opportunities to improve and maintain their health, represent important aspirations for the world community."*

■ *"WHO will continue to use its position to stress the importance of health as a human right and point out inequities in health and access to health services. It will emphasize the need for more equitable access to care and services, defending the rights of vulnerable groups and countries most in need, and drawing the attention of governments and the public to unacceptable health situations."*

AIDS: a glance back, a look forward

Suzanne Cherney

One of WHO's top research priorities is vaccine development. A candidate vaccine that emerged successfully from safety trials in the USA has just entered a safety/immunogenicity trial in Thailand.

Faced with an unprecedented epidemic, the world community took an unprecedented step on 1 December 1994 – World AIDS Day. Heads of government and their representatives from 42 developed and developing countries around the world met in Paris to sign a Declaration pledging stepped-up action on AIDS research, prevention, patient care, and collaboration with people living with AIDS.

Co-organized by the Government of France and the World Health Organization, the Paris AIDS Summit brought to a close WHO's eighth consecutive year of support to countries worldwide striving to slow the spread of HIV, the virus that causes AIDS, and cushion the disease's impact on individuals, families and communities. Since 1987, when the Global Programme on AIDS (GPA) was established, GPA has worked directly to help national AIDS programmes start up, operate efficiently, and draw on ethical and effective control methods.

Strengthening national AIDS programmes

National AIDS programmes, which had been small-scale programmes based mainly in the health sector, must today coordinate a wide range of activities carried out and financed by many different participants and sectors. To help them meet this major managerial challenge, GPA has stepped up its support in the areas of programme planning, reviewing, monitoring and impact evaluation. For example, senior management from over 50 developing countries have already benefited from GPA's intensive 10-day programme management course.

Throughout 1994, multidisciplinary GPA teams stationed in many developing countries continued to provide on-the-spot technical assistance, for example with condom promotion, programmes for injecting drug users, and home-based care of AIDS patients. A further ongoing service to national AIDS programmes is the procurement of low-cost condoms and test kits for ensuring safe blood supplies.

Prevention and care: old tools and new

Ensuring that national AIDS programmes have the best possible tools at their disposal requires research and development. From its global vantage point, GPA helps assess prevention and care methods tried out around the world, and adapts the effective ones for use in developing countries, where 90% of the world's HIV-positive people live. GPA also funds, coordinates and undertakes research of its own to find improved ways of challenging AIDS.

One of GPA's top research priorities is vaccine development. A candidate vaccine that emerged successfully from safety trials in the USA has just entered a safety/immunogenicity trial in Thailand. GPA support for such trials began in

1992, when the Programme started training local researchers in Brazil, Thailand, Uganda and Rwanda, and providing vaccine developers with virus strains circulating in developing countries. (Unfortunately the trial site infrastructure in Rwanda has been destroyed by the civil war.)

A long-neglected area is the development of barriers to the sexual transmission of HIV that women can use, if necessary without the knowledge of their male partner. (Condoms, the traditional barrier, require active male cooperation.) Microbicide foams or creams that can be applied to the vagina before intercourse are now on the agenda of international agencies and the pharmaceutical industry. Safety trials have begun, to ensure that even repeated application does not damage the delicate vaginal lining and hence increase, rather than decrease, women's risk of HIV infection.

So far, only about a quarter of all those infected with HIV have progressed to the severe stage of illness called AIDS. To help countries anticipate the massive needs for comprehensive care (not only medical treatment and nursing but also counselling and social support), GPA conducts training, provides treatment guidelines and other materials, and supports district-level planning, for example in Ghana, India, Nigeria, Thailand, Uganda and Zambia. In *Action for children affected by AIDS*, published recently with UNICEF, GPA draws out the practical lessons learnt about helping orphans and children living with parents with HIV/AIDS. In the past year GPA has also devoted considerable attention to the conventional sexually transmitted diseases (STDs). A major public health problem in their own right, with 150-300 million curable cases a year worldwide, STDs also multiply the risk of HIV transmission: an individual with an untreated STD is perhaps 5-10 times more likely to acquire or pass on HIV during sex. GPA's new *STD management guidelines* include an innovation in patient care: syndromic case management. Briefly, this enables patients to be examined, diagnosed and treated in one visit without any need for laboratory tests – often unavailable in developing countries.

To date, about 50% of all HIV infections have been in teenagers and young adults under 25. A recent GPA analysis suggests that, in places with long-standing epidemics, the figure may be as high as 75%. Clearly, young people urgently need the facts about HIV/AIDS and the skills to delay sex and refuse unsafe sex and drug use. To help schools take up this challenge, GPA has just published, with UNESCO, a resource package for curriculum designers, teachers and students entitled *School health education to prevent AIDS and STDs*.

Advocacy

The prevention of AIDS hinges on educational messages and policy decisions which, many people feel, condone or even encourage questionable behaviour. GPA's curriculum package, for example, may not be utilized so long as teachers and parents believe that school AIDS education increases sexual activity among adolescents. (A GPA review of existing studies shows that if anything, it does the opposite.)

GPA thus invests a great deal of time in explaining why prevention methods such as school AIDS education are effective and not harmful. GPA also advocates compassionate care and support of those living with HIV and AIDS, and urges close collaboration with the communities most affected. It argues for the empowerment of women, millions of whom are unable to negotiate safe sex or leave a relationship that puts them at risk. GPA advocates *against* too – against coercive measures such as mandatory HIV testing which not only flout human rights but threaten to make the epidemic worse, by driving people away from prevention and care programmes.

The years ahead

The roots and repercussions of AIDS extend far beyond the health sector – which is why ministries of education, labour, finance and planning, to mention just a few, are increasingly part of the national response to the epidemic. At the international level too, an unprecedented joint and cosponsored United Nations programme on HIV/AIDS is being built up by WHO and five other cosponsors – UNDP, UNESCO, UNFPA, UNICEF and the World Bank.

The joint programme, which is to be fully operational by January 1996, will provide a unified UN system response to the pandemic – a firm base on which communities worldwide can rely for support in the years ahead as they strive to reduce the spread of HIV and soften the pandemic's harsh impact on those already affected. ■

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How safe is a blood transfusion?

S. M. Lewis

Blood transfusion has a vital and complex role in health care. As it is unacceptable practice to rely on an open market economy to provide an adequate service, this must ultimately be the responsibility of every national government.

In the past 50 years blood transfusions have saved millions of lives. There is no doubt that blood transfusion can be regarded as one of the "miracle drugs" of the twentieth century and that the provision of a service to provide blood, whenever and wherever it is needed, is an indispensable requirement for patient care. But as valuable and necessary as it is, transfusion may be hazardous and it is essential to ensure that the blood is safe to use, without ill effects to the recipient.

Dangers of infected blood

AIDS and hepatitis. The public is only too well aware of the risk of AIDS from a blood donor who is infected with the human immunodeficiency virus (HIV). Equally hazardous is the risk of hepatitis from a donor who is a carrier of hepatitis B (HBV) or hepatitis C virus. As receiving a transfusion of contaminated blood carries a 95% risk of infection, to prevent this from happening is an important part of the work of blood transfusion services in many countries; but in some developing countries the risk of contamination is as high as 35% for hepatitis and more than 20% for HIV. This is because screening tests are not routinely carried out in these countries because of limited funds and lack of adequate resources. Also, there may be a latent period of several weeks or even months after an infection before the tests show positive. Therefore, in well-run services, in addition to testing the blood, care is taken in the selection of donors by checking their medical history, doing a physical examination, and excluding persons at high risk. Because the risk of using contaminated blood is greatest when donors are paid, only unpaid donors should be used and those who elect to become blood donors should be aware of their responsibility for the welfare of the patients who may receive their blood.

Methods have been developed to ensure the safety of Factor VIII obtained from plasma for treating haemophilia. This process destroys the virus without weakening the potency of the material, but unfortunately in developing countries there is still a great reliance on untreated plasma and a cryoprecipitate which have the same hazards as whole blood.

Syphilis and yaws. These "social" diseases still exist, especially in developing countries, although they appear to be less important than AIDS because their incidence is easily controlled and patients can be effectively treated with commonly available, relatively cheap anti-biotics. The spirochaete which causes these illnesses does not survive in blood which has been stored for 3-4 days in the refrigerator, but in practice, as blood is often transfused within a day of collection, all blood donations should be screened (there is a relatively simple serological test) and blood from a positive donor should not be used for transfusion.

Blood parasites. Malaria parasites remain viable in stored blood and they are easily transmitted by transfusion. Where malaria is endemic it is not practicable to screen the blood of all potential donors or to reject those who give a history of previous infection. The risk of infection from a donor also exists in non-malarial countries because of the increasing amount of world travel. Persons who have lived in an endemic area (including those who have been tak-

ing antimalarials prophylactically) and anyone who has had malaria should not be accepted as a donor until three years afterwards.

Another type of blood parasite causes trypanosomiasis or Chagas disease. This occurs throughout tropical and subtropical America, from Mexico to Argentina and Chile, and it has been estimated that 10-20 million people are infected. There are reliable screening tests which are mandatory for blood donors in some countries, but it is where the incidence of the disease is highest that the health services do not have the facilities to do such tests. Because of shortage of blood and especially when it is required urgently it is not feasible to use only tested blood, and the problem will be present until public health measures to eliminate the parasite are provided and enforced in all countries where the disease now flourishes.

Iatrogenic infection. Contamination of the blood may occur during collection from the donor or from using a non-sterile bottle or pack or transfusion set. Transfusion of infected blood may result in sudden collapse, high fever, shock and even death. Prevention of this potentially disastrous complication of blood transfusion depends on careful checking of the sterility of all equipment and reagents, with stringent maintenance of aseptic techniques at all stages by well-trained doctors, technicians and nurses.

The right blood for the right recipient

An incompatible transfusion can be a major cause of morbidity or may even lead to death of a patient. The tests for identifying the blood group of both donor and recipient, and for cross-matching to check the compatibility of the blood require strict adherence to standardized procedures, technical skill in performing the tests, and the use of reliable standardized reagents.

Autotransfusion. Some people take the precaution, when travelling to areas of high incidence, to carry with them a pack of their own blood for autotransfusion should the need arise. But this is a risky practice: if the blood is not kept refrigerated at all times it may become infected and there is a tendency to keep the blood long after the expiry date when it should have been discarded.

The role of WHO

Blood transfusion has a vital and complex role in health care. As it is unacceptable practice to rely on an open market economy to provide an adequate service, this must ultimately be the responsibility of every national government. The role of WHO is to provide support for technical training of laboratory staff, to persuade governments to establish policies for providing well-organized and reliable transfusion services, to provide facilities for HIV and hepatitis screening programmes, and to establish guidelines for standardization and for maintaining the quality of blood and blood products. Several units within WHO have been contributing to these goals. WHO has also worked closely with nongovernmental organizations who provide professional expertise, such as the International Federation of Red Cross and Red Crescent Societies, the International Society of Blood Transfusion, and the International Council for Standardization in Haematology.

WHO's efforts to solve the problems have intensified over the last few years with notable successes – the total amount of blood collected globally has increased by 15% and it has become safer to use as the number of countries testing all donations for HIV and HBV has increased from 50% to 70%. Great progress has been made but much remains to be done. ■

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Imagine victory over tuberculosis

Christy Hanson

The WHO Tuberculosis Programme has been working hard to control tuberculosis in the face of HIV/AIDS. A strong global commitment to fight this disease could, eventually, bring about victory.

Imagine, for a moment, a disease that has already infected one-third of the world's population. A disease that will kill more people than any other single infectious disease – three million people this year alone. Now suppose that becoming infected with this killer is as easy as breathing the air.

Consider the fury of this disease when introduced to a person already infected with HIV. Imagine the power of this opportunistic infection as it kills more than one-third of AIDS patients and can be passed on to even those in casual contact with the patient. Picture a disease so virulent that, if not completely cured, it can become untreatable. Now contemplate why, even though treatment is inexpensive and almost completely effective, people are not being cured. This is not a nightmare, but today's reality with tuberculosis whose worldwide resurgence has created a global emergency.

Once thought to have been essentially eliminated in the developed world, tuberculosis has been allowed to emerge again and to reach epidemic proportions in both rich and poor countries. It will kill 30 million people this decade if the current epidemic is left to run its course. When a person inflicted with the disease coughs, the bacillus spreads to others through the air and may settle in dust particles that can linger in the air for hours. One tuberculosis patient may infect dozens or even hundreds of other individuals in a lifetime.

A TB/HIV co-epidemic

HIV/AIDS has added another terrifying component to the TB epidemic. While a person with a healthy immune system is likely to remain disease-free even after being infected with the bacillus, an HIV-positive person is 30 times more likely to develop active tuberculosis once infected. It will then spread among casual as well as close contacts of its victims. In areas of high HIV prevalence, a co-epidemic of HIV and TB is raging. In Zambia, for example, the number of TB cases with HIV co-infection has nearly tripled since the late 1980s. Worldwide, TB/HIV co-infection was present in 4% of all TB cases in 1990 and is expected to occur in 14% of cases by the year 2000.

Tuberculosis, especially when it is combined with AIDS, can quickly become virulent and exhaust the body.

Directly observed treatment: an ideal way of ensuring regularity of treatment so as to achieve a complete cure of tuberculosis

Peruvian posters announce the good news: although a dreaded disease, tuberculosis is curable.

TB is also changing and is now appearing in strains that are drug-resistant. Multidrug-resistant TB is a result of inadequate or incomplete treatment. If a tuberculosis patient discontinues treatment while even a few bacilli remain, these can multiply and become resistant to the anti-TB drugs that initially would have destroyed them. In Somalia, some 20-30% of all TB cases are drug-resistant. In New York City, more than one-third of TB strains tested were resistant to one anti-TB drug, and almost one-fifth were resistant to the two main drugs used for treatment.

There is one bright side: this is still, for the most part, a curable disease. The drugs needed are inexpensive, costing as little as US$ 13 per patient, and can be taken on an outpatient basis. The World Bank's *World Development Report 1993: Investing in health*, reported that TB control is "among the most cost-effective of all health interventions." By curing patients, the spread of TB is stopped at the source. The six-month regimen using a combination of drugs must be monitored closely and adhered to completely. Yet patients around the world are not being cured. Many TB programmes are antiquated and underfunded, using outmoded treatment regimens and with inadequate supervision. They achieve dismal cure rates, produce drug-resistant disease and allow the co-epidemic of HIV/TB to race on.

The fight against TB

The WHO Tuberculosis Programme has been working hard to bring about a world without tuberculosis. It is educating and training health workers to enable them to better identify and treat tuberculosis patients. Through its six-day training course entitled "Managing tuberculosis at district level", it offers technical assistance while introducing a standard approach to TB control that incorporates the details of appropriate drug regimens with an organized system of recording, monitoring and reporting tuberculosis cases. Health workers and organizations committed to the fight against tuberculosis are learning how best to recognize, treat and cure TB patients.

The Programme ensures that regular drug supplies are established and maintained. By accurately recording and reporting cases, TB programmes can forecast their drug needs and ensure that they are available. The hard work that goes into disease recognition, treatment and follow-up, both by health workers and patients, will be wasted if at mid-treatment the drugs necessary to complete the treatment become unavailable.

Success stories are emerging, however. China, for example, with nearly 25% of the world's TB cases, used to have cure rates of less than 50%. An ambitious project, covering a population of almost 500 million people and incorporating WHO's treatment guidelines and system of follow-up and recording, together with an innovative approach of supplying free TB medication, has resulted in cure rates of over 90%. By adopting a recommended regimen of directly observed treatment, within a stronger management system, Tanzania has seen cure rates increase from 43% to nearly 80%. This was due to technical guidance and support from the International Union Against Tuberculosis and Lung Disease, the German Leprosy Relief Association, the Swiss government, and the Netherlands TB and Leprosy Relief Association.

These successes show that communities no longer need to be plagued by TB or by individuals who cannot be cured. A global commitment to fight this disease can, eventually, bring about victory over tuberculosis. ■

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Infections old and new

James W. LeDuc

In 1994, WHO began a novel programme on new, emerging and re-emerging infectious diseases. Based on global surveillance, it should ensure that early warning is given in time to respond to any new threat to public health.

It seems that almost every day newspapers, radio or television have another story either of a new disease never before known to medical science or of an old scourge like tuberculosis or cholera reappearing to remind us that infectious diseases are still very much among us. The growing threat of new, emerging, and re-emerging infectious diseases has long concerned medical science and has now reached the attention of the general public.

In response to this ground-swell of concern, WHO began in 1994 a novel programme on new and emerging infectious diseases, based on the Organization's existing commitments to HIV/AIDS, tuberculosis and other prominent infectious diseases which are on the rise globally. Working with various national agencies, non-governmental organizations and donors, WHO is carrying out a global plan to tackle emerging infectious diseases.

What are the causes of this new phenomenon? Changes in lifestyle head the list. Population growth and massive movement of people from country areas to already over-crowded cities have led to the growth of peri-urban slums where thousands of people live under unhygienic conditions. Such rural to urban migrations worldwide have outpaced supplies of clean water and adequate housing, thus establishing a human reservoir of many known infectious diseases and a spawning ground for the emergence of new ones.

As population pressures grow and resources dwindle, people are increasingly expanding into what were once remote areas where they are increasingly exposed to exotic infectious agents. As a result, diseases once thought to be rare may thrive on the newly introduced human hosts. An example is Oropouche fever, a disease known from only a few isolated cases in northern South America and the Caribbean. New settlements in the Amazon Basin have been followed by a proliferation of the insect vector for this virus, which now regularly causes big outbreaks of Oropouche fever in the area.

Diseases that travel

International travel was once the exclusive right of diplomats and the rich. Today Europeans and North Americans think nothing of holidaying in Asia or Africa, while residents from the tropics go sightseeing in the temperate zones. Infectious diseases, like people, travel the globe with the airlines, so that a person infected in one place may become ill in quite another, and in the process may seed a new outbreak. The mixing of pathogens that once took months now occurs in days or even hours.

Fierce competition in the fast-food industry has obliged producers to bulk process the ingredients, so that the meat used in a hamburger is a mixture, not from one or two cows but from a large number of animals. A single infected animal could thus contaminate literally thousands of hamburgers. If these hamburgers are not fully cooked, there is an obvious potential for massive foodborne outbreaks. A recent outbreak of bloody diarrhoea in several states in the USA was traced to fast-food hamburgers.

Organisms most able to adapt to changing envi-

ronments are the ones most likely to reproduce and thereby succeed in perpetuating their species. This is true for all living things, including the pathogens that cause infectious diseases; hence the shift and drift of influenza viruses as well as the development of antimicrobial resistance among pathogenic bacteria and parasites.

An effective public health programme is reflected in the *absence* of disease. Yet today, owing to decreasing budgets, we find a near global collapse of routine surveillance for infectious diseases, even in the most developed countries. Public health laboratories may be under-staffed and ill equipped to diagnose even common pathogens, let alone exotic importations; we may therefore find ourselves unable to recognize potentially significant public health problems.

Need for surveillance

Global populations will continue to grow, people will continue to travel, technology will continue to evolve and microorganisms will continue to mutate and adapt. The only practical point of intervention remains basic public health: surveillance, diagnosis and response, coupled with good hygiene and sanitation. The WHO strategy for new, emerging and re-emerging infectious diseases focuses on recognizing common pathogens, so that we are well prepared when something new or unusual appears. Comprehensive surveillance coupled with strong laboratory expertise should give us the early warning necessary to respond.

WHO's four goals are:

- to strengthen global surveillance of infectious diseases;
- to build international infrastructure to recognize, report and respond to new and resurgent disease threats;
- to create an applied research programme to focus on practical problems and realistic solutions;
- to reinforce disease prevention and control through targeted interventions.

The project is still developing, but some early accomplishments include regional and local projects to reduce urban mosquitos, especially *Aedes aegypti*, the vector of both yellow fever and dengue viruses. Efforts are also under way to prepare and distribute diagnostic reagents to assist in recognizing some less common virus diseases. Networks of collaborating centres are being established to strengthen disease surveillance and to share the information obtained. Specific training activities have started in less developed countries to improve laboratory capacity and strengthen surveillance. And a computer-based network is in place to monitor trends in antimicrobial sensitivity.

Strategies to deal with new, emerging and re-emerging infectious diseases focus on ensuring that local health officials can recognize unusual disease events and are able to invoke preventive measures to limit their spread and impact on society. Above all, national, regional and international cooperation is needed to face this challenge. ■

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Malaria: hope for the future

Anatoli V. Kondrachine & Peter Trigg

The malaria parasite and the mosquito proved too crafty for malaria eradication efforts in the 1950s and 1960s. Now WHO's Global Malaria Control Strategy is much more pragmatic, focusing on disease management, selective and targeted prevention measures where they can be cost-effective, and community action.

Malaria kills more than 1.5 million people each year – one death at least every 20 seconds – and between 300 and 500 million others fall ill from it, often severely. Over a million of these deaths are children aged under five, but they also include women in their first or second pregnancy, older children and young adults. Tropical Africa accounts for the overwhelming majority of both cases and deaths.

Armed with DDT and other insecticides and the affordable drug chloroquine, WHO mounted a Global Malaria Eradication campaign for 15 years between 1954 and 1969. Africa south of the Sahara was not included as eradication was simply not considered feasible there. Much was accomplished and learned, but the attempt showed that there was no single method of bringing the disease under control, let alone of eradicating it. Today, with much more respect for the capacity of the mosquito and the malaria parasite to withstand our efforts and a better understanding of the social and economic factors involved, we have a new strategy in place.

This Global Malaria Control Strategy was developed by the endemic countries and endorsed at a Ministerial Conference on Malaria Control convened by WHO in Amsterdam in 1992. In contrast to the eradication era, it recognizes that malaria problems vary enormously from country to country, from area to area and even within different groups of the population, so that control activities must be adapted accordingly if they are to succeed.

Curable and preventable

The aims of the new strategy are simple – to prevent people from dying from the disease and to reduce the suffering and the social and economic costs it causes. This is possible since malaria is a curable and preventable disease which can be controlled. But since many of its causes and their remedies lie outside

the health sector, the strategy requires that malaria control should become not only an integral part of general health programmes but should also be coordinated with the relevant development programmes in the non-health sectors. At the local level, each community will need to be motivated to contribute in an appropriate way.

It will not be an easy task. Malaria often occurs in remote areas, with poor housing and a lack of basic health services. Crowding, migrations, rapid urbanization, war and civil disturbances compound this situation. So scarce resources must be allocated to such emergency situations. The continuous intensification and spread of parasite resistance to antimalarial drugs is another major problem. It has, for instance, caused a dramatic rise in the drug cost for treating an uncomplicated case from around US$ 0.15 to US$ 2.00 in most of the Indochina peninsula and in the Amazon region of Brazil.

Nevertheless, considerable progress has already been made. Most governments in malaria-endemic countries in Africa have increased their commitment towards control by mobilizing additional national resources for 1994. WHO has also increased its commitment so that 25 of the malarious countries in Africa south of the Sahara have now developed plans of action in line with the strategy, and ten of those countries have already put their plans into action. Communities are also now beginning to play their part in such countries as Eritrea, Ethiopia and Ghana.

Less use of insecticide

Where the old eradication practices relied heavily on insecticide spraying, selective vector control is proving more cost-effective and the results more sustainable; this is now an integral part of malaria control in many countries of Asia, the Western Pacific and the Americas. House-spraying is restricted to specific high-risk areas and epidemics, while in a few countries – particularly in the Western Pacific – insecticide-impregnated bed nets are a regular feature of control. Large numbers of people are protected by ecologically safe methods and the decrease by as much as 80% in the amount of insecticide used means a major saving of resources.

Anti-malaria activities should be integrated into general health programmes.

When the strategy was adopted it was recognized that new skills would be required if the general health services were to take responsibility for diagnosis and treatment, managers would have to adapt the strategy to local situations, existing malaria staff had to unlearn "old" eradication practices, and the community needed to understand malaria and how to deal with it. Training and the development of health education materials are a major priority. For example, programme managers from 45 African countries and district-level staff in 27 African countries were trained by the end of 1994.

There is hope for the future but any impact the strategy will have on malaria illness and death will depend first and foremost on maintaining the political will to combat the disease. Increased international support must be forthcoming to maintain this will, as well as funding especially aimed at strengthening health services. Malaria control must be recognized as a vital component in development programmes aimed at combating poverty and improving the environment. Finally, technological progress must continue at an ever-increasing pace. ■

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Technological developments

Malaria is often indistinguishable from other illnesses with fever. Guidelines for managing childhood diseases have therefore been produced for the care of the sick child and are being field-tested. This work involves several WHO control programmes such as diarrhoeal and acute respiratory diseases, measles, ear infections and malnutrition as well as malaria.

Among several alternatives to conventional microscopy is a new "dip-stick" method which is simple, rapid and sensitive for detecting the ***Plasmodium falciparum*** parasite.

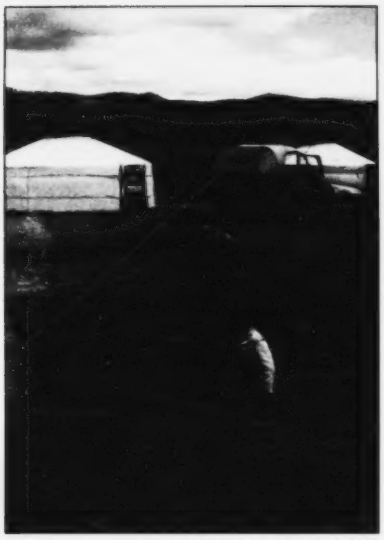
A limited number of new drugs are at an advanced stage of development. Artemisinin and its derivatives are playing an essential role in treating multidrug-resistant falciparum malaria, and other novel drugs are currently in clinical trials.

The development of a malaria vaccine is another promising strategy for cost-effective malaria control. One synthetic "cocktail" vaccine developed in Colombia has been extensively studied in South America and more recently in Africa and south-east Asia. Recent studies in Tanzanian children under five years old showed the vaccine to be safe, induced antibodies and reduced by about 30% the risk of developing clinical malaria. Vaccines for children in Africa, one of the high-risk groups for malaria mortality, remain a high priority.

Mongolia's national drug policy

Dashdavaa Bolormaa

A country in transition from a central planning system to a free market economy, Mongolia has drawn up and put into effect a National Drug Policy which is already bringing benefits to both individuals and communities.



The scattered rural population of Mongolia will greatly benefit as the drug supply situation improves.

Landlocked and sparsely populated, Mongolia lies in Central Asia between Russia and China, with a population of 2.2 million scattered over an area of 1 505 000 sq.km. Since 1989, it has been in transition from a central planning system to a free market economy. As the health infrastructure was developed according to the central planning process, recent moves in the political system have demanded major changes in the management of the health services.

The drug supply system is administered by the Mongolemimpex Corporation, the national importer and wholesaler, which is responsible for purchasing, importing, storing and distributing drugs for the use of all government-owned health facilities. The harmful impact on drug availability of the economic crisis resulting from the political reforms over the past four years has been alleviated thanks to generous drug donations.

In 1991, Mongolia's Minister of Health urgently requested WHO's assistance and an expert WHO mission went to Mongolia to evaluate the situation in the drug supply sector. The recommendations of the mission strongly favoured the development of a National Drug Policy, under which an Essential Drugs Programme (EDP) would be drawn up to ensure that good quality, affordable, essential drugs would be made available to the whole population, and the rational use of drugs by prescribers and public would be actively promoted.

In 1992, the Ministry of Health, with support from WHO's Action Programme on Essential Drugs, organized the First Conference on National Drug Policy, and the EDP was established, again with technical support from WHO and with financial assistance from the Netherlands government. The first national Essential Drugs List had been drawn up the previous year, and the National Drug Council recommended a new list in 1993 based on the seventh WHO Model List but of course adapted for local indications and use. Standard treatment guidelines have recently been produced with the support and assistance of local specialists.

Covering 139 common health problems, the guidelines have already been published and distributed, together with the Essential Drugs List and National Drug Policy documents, to all the country's 6000 doctors, 380 pharmacists and 1500 feldshers (middle-level primary health care workers). The EDP is currently preparing a Mongolian National Formulary, in the Mongolian language, to encourage rational prescribing and use of generic names.

The EDP has also run local workshops on National Drug Policy, the Essential Drugs concept, the rational use of drugs and use of treatment guidelines, drug quantification and drug storage. WHO fellowships have helped to train health personnel in the areas of drug regulation, procurement and store management, clinical laboratory management, clinical pharmacology, and good manufacturing practice. Mongolem impex now has a computerized inventory system.

The supply of essential drugs and vaccines has improved and there are signs of more rational prescribing of drugs. Infant mortality has fallen from 63.4 (1990) to 46.8 (1994) per 1000 live births, while reports of some infectious and parasitic diseases have also decreased, including an almost threefold reduction in cases of acute viral hepatitis. The development of a National Drug Policy has clearly benefited both individuals and communities, and promises continuing improvement in the future. ■

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Towards a rational drug policy

Aidan Chidarikire

The political ideology of the newly independent Zimbabwe and its nascent health policy were at one with WHO's primary health care strategies in the early 1980s, following the epoch-making Alma-Ata international conference of 1978.

However, those early years were marked by fierce competition for scarce resources because of the government's ambitious multilateral development programme. As a drug regulatory authority, the Drugs Control Council, already existed and because of the clear drug policy guidelines contained in the Council's policy paper "Planning for equity in health", the Ministry of Health was able to score a number of successes. For instance, the now nationally popular Essential Drugs List for Zimbabwe (EDLIZ), targeted for completion in 1986, in fact appeared in 1985.

The terms of reference for the newly formed National Drug and Therapeutics Policy Committee (NDTPC), were summed up by the then Minister of Health: "Looked at from the stand-point of the people's health...we need to rationalize the procurement, provision, prescription, sales and promotion of pharmaceuticals in Zimbabwe". EDLIZ was the culmination of the NDTPC's work. This list of essential drugs was based on the WHO model list, with a complementary section of treatment guidelines, which made it user-friendly from the outset.

Ensuring availability

A holistic programme, which looked at all the stages of the drug supply chain, was drawn up to ensure that EDLIZ drugs would always be available. This was the Zimbabwe Essential Drugs Action Programme (ZEDAP), set up with the joint collaboration of the government, WHO and the Danish International Development Agency. Its strategy was to bring about maximum involvement of the grass-roots health worker, and its policy of using generic drug nomenclature rather than brand names was at first condemned by the Pharmaceutical Manufacturers' Association as posing a threat to local industry.

Nevertheless, ZEDAP went on to score many successes including accurate quantification of drug needs using a methodology developed by WHO's Action Programme on Essential Drugs, use of a modified list of WHO indicators in essential drug surveys to monitor progress, and the development and extensive use of training materials – with which 160 workshops trained over 6000 health workers! The initial resistance and mistrust from key quarters of the private sector has subsided, to be replaced by amicable collaboration.

By 1996 there will be more rational drug use backed by information and education activities, the country should have more efficient government medical stores, and drug supply management will have a sustainable structure. Better still, drug availability should have risen from the 73% indicated by a 1993 survey to our target of over 85%. ■

Making essential drugs available – an important element of primary health care.

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Essential drugs: to everyone's advantage

In 1977 a WHO committee of experts, having discussed how many drugs were really needed to ensure a reasonable level of health care for as many people as possible, recommended a list of some 200 drugs and vaccines of proven efficacy and safety. Most were no longer protected by patent and so could be produced at reasonable cost. This essential drugs concept led to a reorientation of the role of medicines in public health and became an important milestone in WHO's history. The list is revised regularly and now numbers some 280 drugs. It is a key element to achieving the goal of access by all to safe and effective medicines, and their appropriate use.

Today, over 120 countries have national lists of essential drugs and another 60 are developing and implementing comprehensive national drug policies with support from WHO's Action Programme on Essential Drugs. The concept and the tools developed by WHO have also been adopted by multilateral and bilateral agencies, as well as nongovernmental organizations, in their pharmaceutical policies. After some initial reluctance, the pharmaceutical manufacturers now accept the principle of a list of nonproprietary drugs which even the least developed countries can afford, and appreciate that it works to everyone's advantage.

The fall-out from Chernobyl

Anatoly F. Tsyb, Victor M. Ponomarenko, & Guntis Ozolins

The health consequences of the disastrous fire at the Chernobyl nuclear plant in 1986 are being closely studied under an international programme backed by WHO. Results of the study will help all countries to be better prepared to cope with any future radiation accident.

WHO's international programme on the health effects of the Chernobyl accident (IPHECA) was set up in response to an appeal from the Ministry of Health of the USSR in March 1990 to provide medical assistance to the affected population. Until then, medical assistance and scientific research had been provided almost entirely from national resources. But the scale of the accident was such that it proved impossible for one country to cope with its effects, much less conduct advanced research and draw the appropriate conclusions.

IPHECA is looking into a very wide range of medical issues resulting directly or indirectly from the immense radioactive contamination which followed a fire at the Chernobyl nuclear plant near Kiev in April 1986. Its general purpose is to limit the damage to health, obtain reliable scientific information on that damage, and to draw conclusions that will lead to better medical preparedness for any future radiation accident.

The overall cost of this multifaceted, long-term programme is not known but could be well over a hundred million dollars. Voluntary contributions to the programme when the first pilot projects went into operation totalled about US$ 20 million. Most came from Japan, and there was also financial support from the Czech Republic, Finland and Slovakia.

Given the acute nature of the medical problems and the limited resources available in heavily contaminated areas of the Republic of Belarus, the Russian Federation and Ukraine, five of the most urgent pilot projects have been running since 1991. They are designed to show up the diseases caused by radiation and to concentrate on children and adolescents, the most vulnerable in the population. They involve mainly thyroid cancer and thyroid disorders (the "thyroid gland" project), diseases of the haematopoietic and lymphatic systems (the "haematology" project), and mental retardment and other brain dysfunctions in children who were exposed to radiation *in utero* (the "*in utero* brain damage" project).

Checking for radioactivity levels in the body after exposure.

Investigation of health effects

Establishing a link between the diseases to be detected and the effects of radiation calls for reliable information on the individual doses sustained by various organs and tissues, and by the entire body. Soon after the accident, direct measurements were made of iodine radionuclide exposure to the thyroid gland in over 140 000 children. However, due to inadequate organization and medical preparedness, most of the children in areas affected by radioactive iodine were not directly examined. The purpose of the "dosimetry support" activity is to reconstitute the doses of both internal and external exposure.

The gathering, processing and storage of medical and dosimetric (dose-measuring) information, and the formation and monitoring of cohorts of subjects to be examined to evaluate the radiation risks is the task of the "epidemiological registry" project. Each affected country has a national register that uses standard technology. Between them, they contain medical and dosimetric data on 616 644 residents of the most radioactively contaminated territories, and on 331 679 recovery workers, who were directly involved in deactivating the stricken reactor and cleaning up the 30-km zone around it.

In order to standardize research conducted in Belarus, Russia and Ukraine, modern medical diagnostic and dosimetric equipment, computers, reagents and diagnostic kits to the value of US$ 18 million were purchased through WHO. About 100 specialists have undergone train-

ing at the leading foreign centres and suppliers' factories.

Work on the Mascot project of IPHECA is being completed; this will permit teleconsultations and teleconferencing between, for example, the radiation medicine centres of Belarus, Ukraine and other countries in the world, and also for exchange of large volumes of medical dosimetric information. Under this project, a radio relay line has been set up between Obninsk and Moscow, as part of the telecommunication network.

Findings to date

Cancer is the most serious of the thyroid disorders reported. Since the accident, 653 cases of thyroid cancer have been diagnosed in children and adolescents: 350 in Belarus, 259 in Ukraine and 44 in Russia (Bryansk region only). Unfortunately, more cases of thyroid cancer are being discovered as time goes on. The tumours take an aggressive course, with early metastasis to the regional lymph nodes and the lungs. All the sick children have had thorough medical examination and treatment in special centres at home and abroad, and are under systematic observation.

So far no increase in the number of cases of leukaemia and lymphoma in the most affected areas has been detected, but there has been a significant increase in the number of non-Hodgkins lymphomas, multiple myeloma and chronic lymphoid leukaemia among older people, especially those over 60.

To detect cases of mental retardation and other possible brain dysfunctions in children exposed to radiation *in utero* following the Chernobyl accident, 2189 children from the contaminated territories of the three countries were examined. Some of them were found to have significant retardation of intellectual and mental development, and also behavioural and emotional disorders. The role of the radiation factor in these disorders cannot be identified until the individual absorbed doses are determined.

It is already clear that the contribution of the pilot projects of the IPHECA programme to the study and the mitigation of long-term health effects from the Chernobyl accident in the three worst affected countries has been timely and significant, and that this work should be continued and expanded. ■

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Examination of thyroid glands that may have been affected by exposure to radioactivity.

Since the Chernobyl accident, systematic check-ups have been carried out on all children in the affected areas.

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In the next issue

Röntgen discovered X-rays in 1895, and Becquerel discovered radioactivity in 1896. This was the start of radiological science which is now an indispensable part of medicine. The May-June issue of *World Health* marks this hundredth anniversary by presenting many facts of this remarkable example of science at the service of humanity. ■

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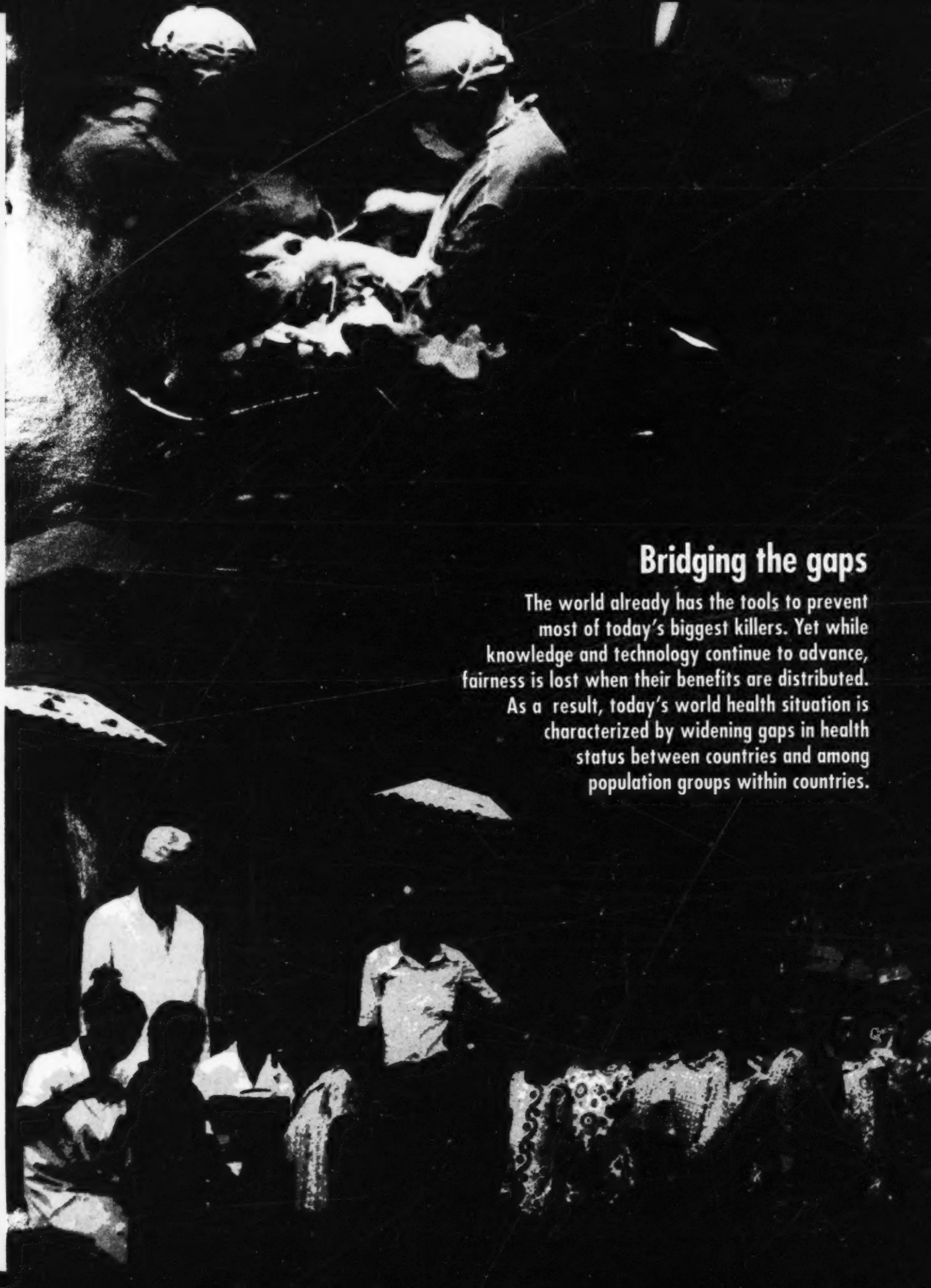

Bridging the gaps

The world already has the tools to prevent most of today's biggest killers. Yet while knowledge and technology continue to advance, fairness is lost when their benefits are distributed. As a result, today's world health situation is characterized by widening gaps in health status between countries and among population groups within countries.